# INTERPRETAZIONE DELLA SPIROMETRIA

#### STADIAZIONE DELL'OSTRUZIONE

LIEVE	VEMS <100% e ≤ 70%
MODERATA	VEMS < 70% e ≥ 60% del predetto
MODERATAMENTE GRAVE	VEMS < 60% e ≥ 50% del predetto
GRAVE	VEMS < 50% e ≥ 34% del predetto
MOLTO GRAVE	VEMS < 34% del predetto

Se la CPT non è stata misurata si considera la riduzione della CV e si parla di "restrizione dell'escursione volumetrica dei polmoni"
LIEVE: CV < predetto ma <u>&gt;</u> 70%
MODERATA: CV 60-70% predetto
MODERATAMENTE GRAVE: CV 50-60% predetto
GRAVE: CV 50-34% predetto
MOLTO GRAVE: CV < 34% predetto

#### **STADIAZIONE DELLA RESTRIZIONE**

### TEST DI REVERSIBILITA

il FEV1 aumenta di > 12% **@** 200 ml rispetto al basale tornando a valori normali (> 80% del predetto):

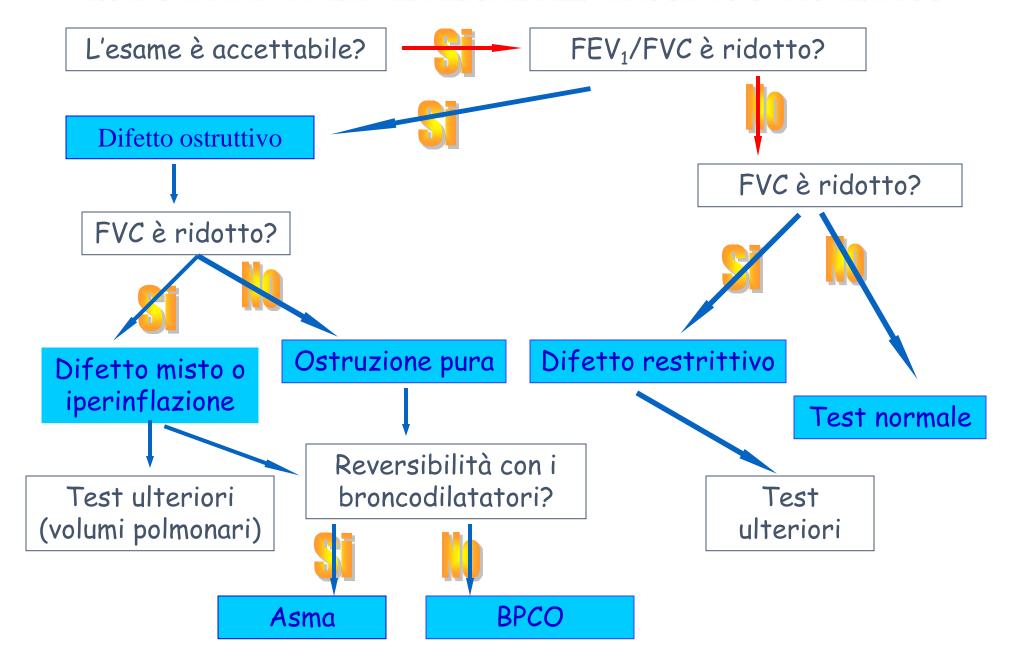
DEFICIT DI TIPO OSTRUTTIVO COMPLETAMENTE REVERSIBILE

il FEV1 è aumentato del 12% o di 200 ml rispetto al valore basale ma resta < 80% del teorico e VEMS/CVF < 70:

**DEFICIT DI TIPO OSTRUTTIVO PARZIALMENTE REVERSIBILE** 

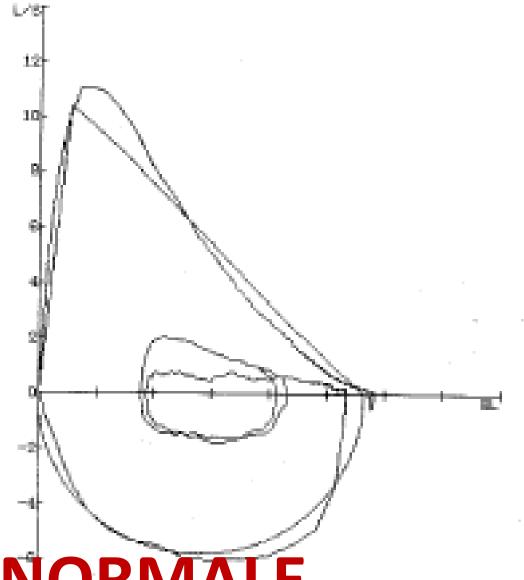
il FEV1 aumenta < 12% o di 200 ml rispetto al valore basale: DEFICIT VENTILATORIO NON REVERSIBILE

#### FLOW-CHART DI INTERPRETAZIONE DEL TRACCIATO SPIROMETRICO



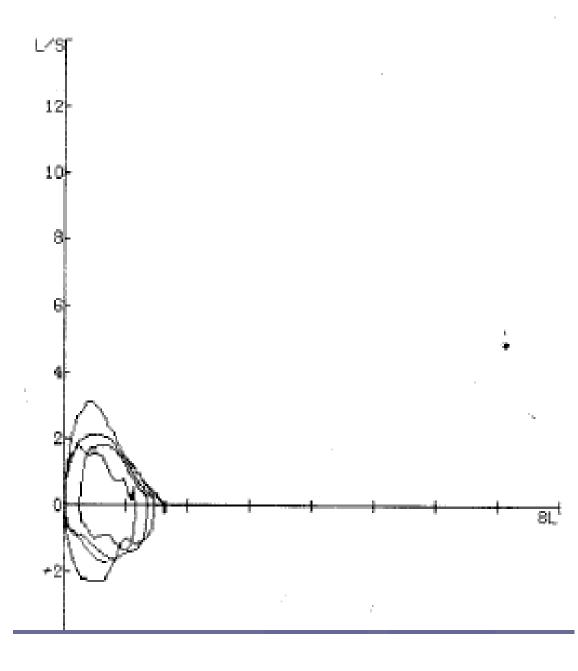
PARAMETRI	Teorico	PRE #1	%leor.
*FVC L	4.68	5.49	117
*FEV1 L	3.64	4.54	125
*PEF L/s	8.80	7.55	86
FVC L	4.68	5.49	117
FEV1 L	3.64	4.54	125
FEV1/FVC %	75.9	82.7	109
PEF L/s	8.80	7.55	86
FEF25 L/s	7.80	7.36	94
FEF50 L/s	4.71	7.06	150
FEF75 L/s	1.85	1.99	108
FEF25-75 L/s	3.58	4.94	138
FEF75-85 L/s		1.52	
	- ^^	-00	100
EVol mL	0	170	
FET s	6.00	3.94	66
PEF Time s		0.110	
L10.0 L		3, 12	
FEV0.5/FVC %		62.5	
FEV0.75 L		4.14	
FEV075/FVC %		75.4	
FEV2 L		5.27	
FEV2/FVC %	4 45	96.0	100
FEV3 L	4.45	5.44	122
FEV3/FVC %	95.1	99.1	104
FEV6 L	4.68	5.49	117
FEV1/FEV6 %	77.8	82.7	106
FEV1/PEF s	0.41	0.60	146
FEV1/FEV0.5 %		132.4 4.73	101
ETUO I		4 / 4	
FIVC L	4.68		
FIV1 L	3.64	4.73	130
FIV1 L FIV1/FIVC %	3.64 75.9	4.73 100.0	130 132
FIV1 L FIV1/FIVC % FIF25 L/s	3.64	4.73 100.0 2.65	130
FIV1 L FIV1/FIVC % FIF25 L/s FIF50 L/s	3.64 75.9 7.97	4.73 100.0 2.65 2.62	130 132 33
FIV1 L FIV1/FIVC % FIF25 L/s FIF50 L/s FIF75 L/s	3.64 75.9	4.73 100.0 2.65 2.62 2.35	130 132
FIV1 L FIV1/FIVC % FIF25 L/s FIF50 L/s	3.64 75.9 7.97	4.73 100.0 2.65 2.62	130 132 33

	AGE: 26 RACE:	YRS H WHITE		MALE on WY:	80 ks
ĺ.	FVC TEST	3			
	FUNCTION	UNIT	MEAS	PRED	%PR
	FVC	L	5.89	5.63	105
	FEV.5	L.	3.66		
	FEV1	L	4.75	4.71	101
	FEV3	L.	5.73		
	FEV1%T	%		82.6	
	FEV1%G	76	80.6		
	FEV3%T	%			
	FEV3%G	76	97.3		
	MEFR	L/S	10.00		
	MMEE	L/9	4.39	5.18	95
	EX TIME	8	4.16		
	V EVT		0.17		



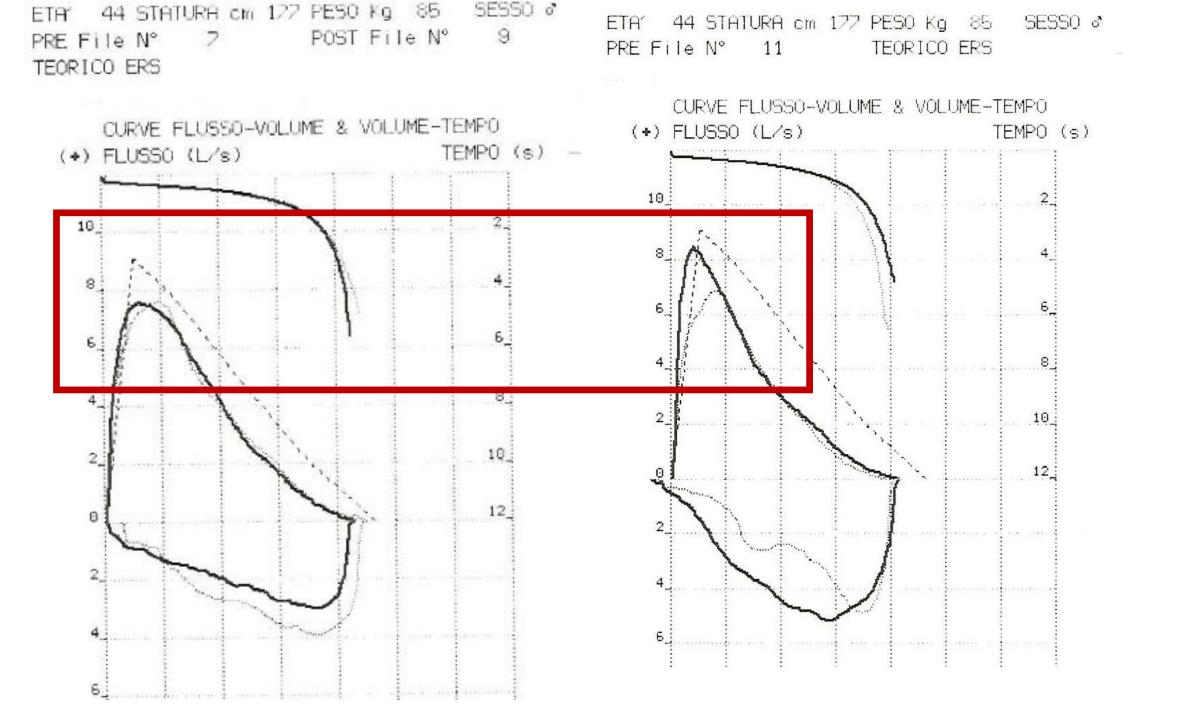
## SPIROMETRIA NORMALE

	ID # AGE: 7 RACE:	O1 YRS H7 WHITE		FEMALE om WT:	730 Iorr 25 kg
ļ	FVC TEST FUNCTION	UNIT	MEAS	PRED	%PR
	FVC FEV.5	L L	1.68	1.70	99
	FEV1 FEV3	L L	1.48 1.68	1.45	102
	FEV1%T	%		84.0	



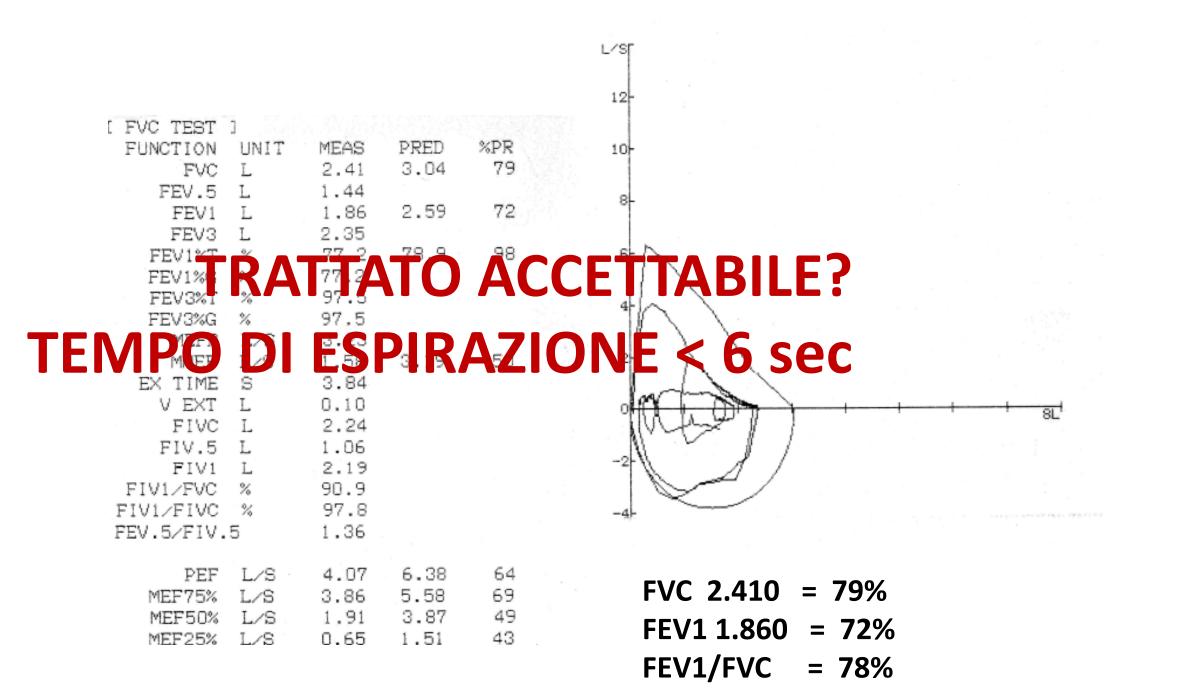


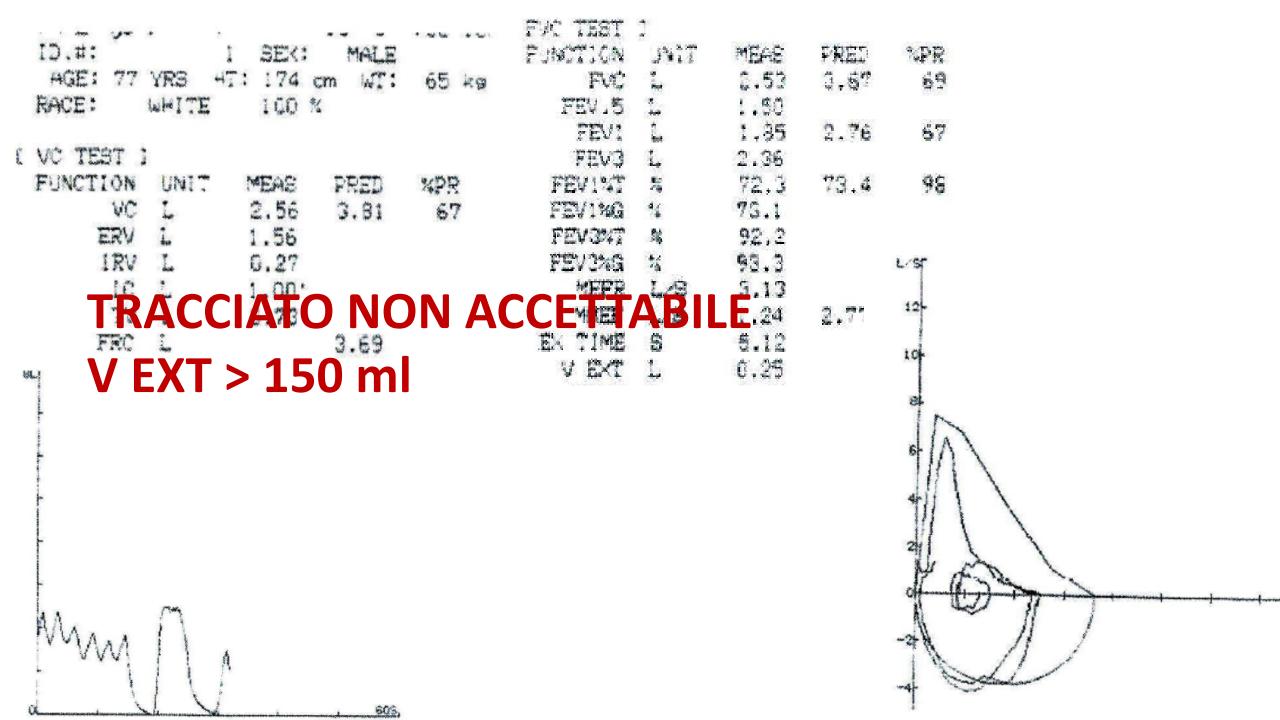










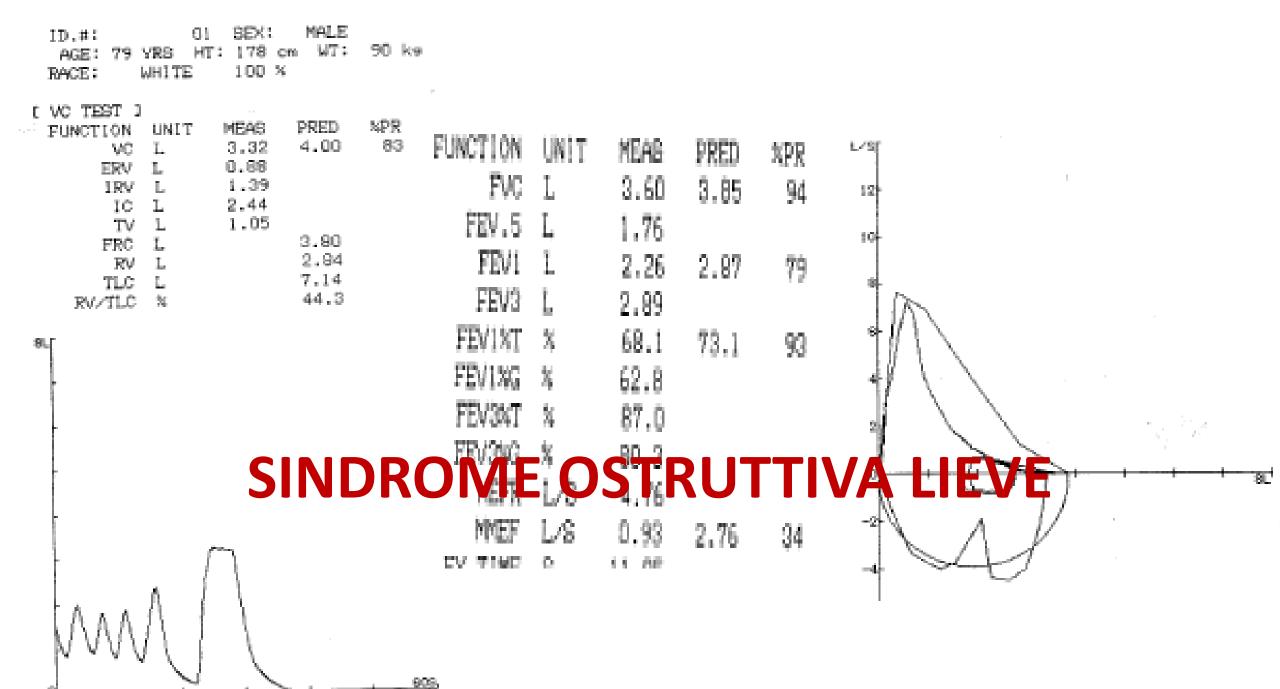


TEORICO ERS (ECCS)

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% TEORICO IN USO 100%

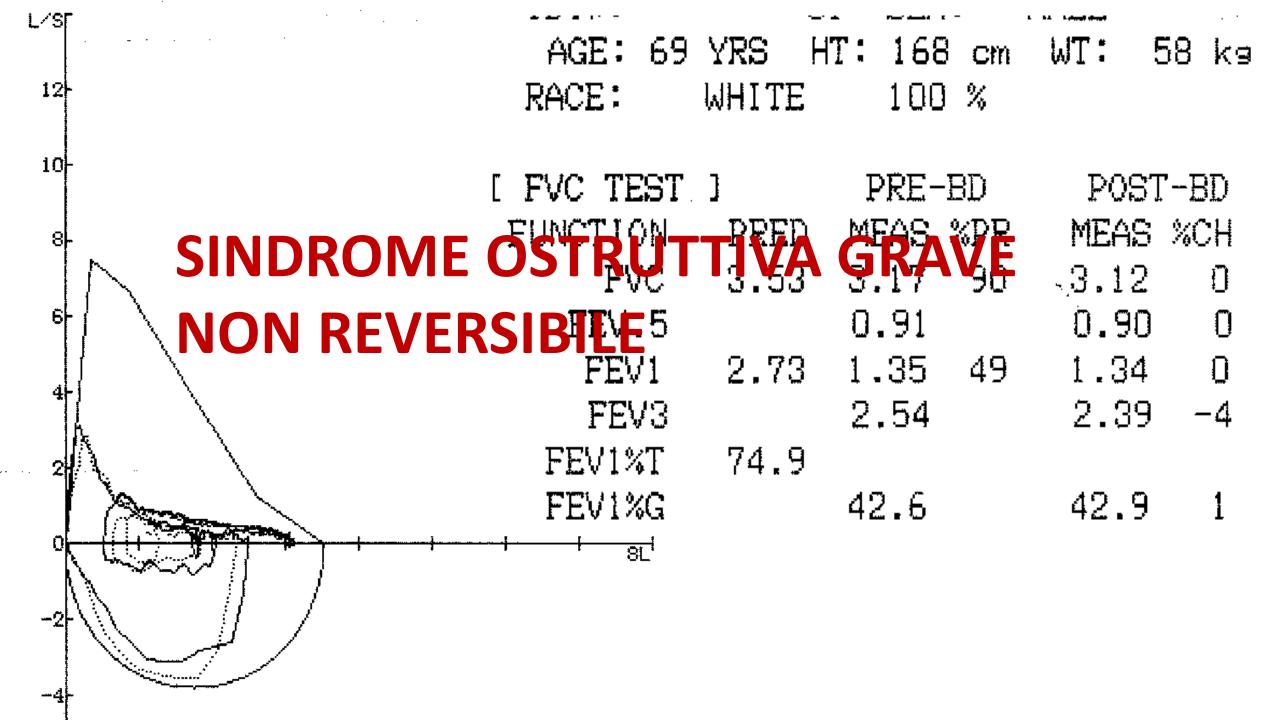


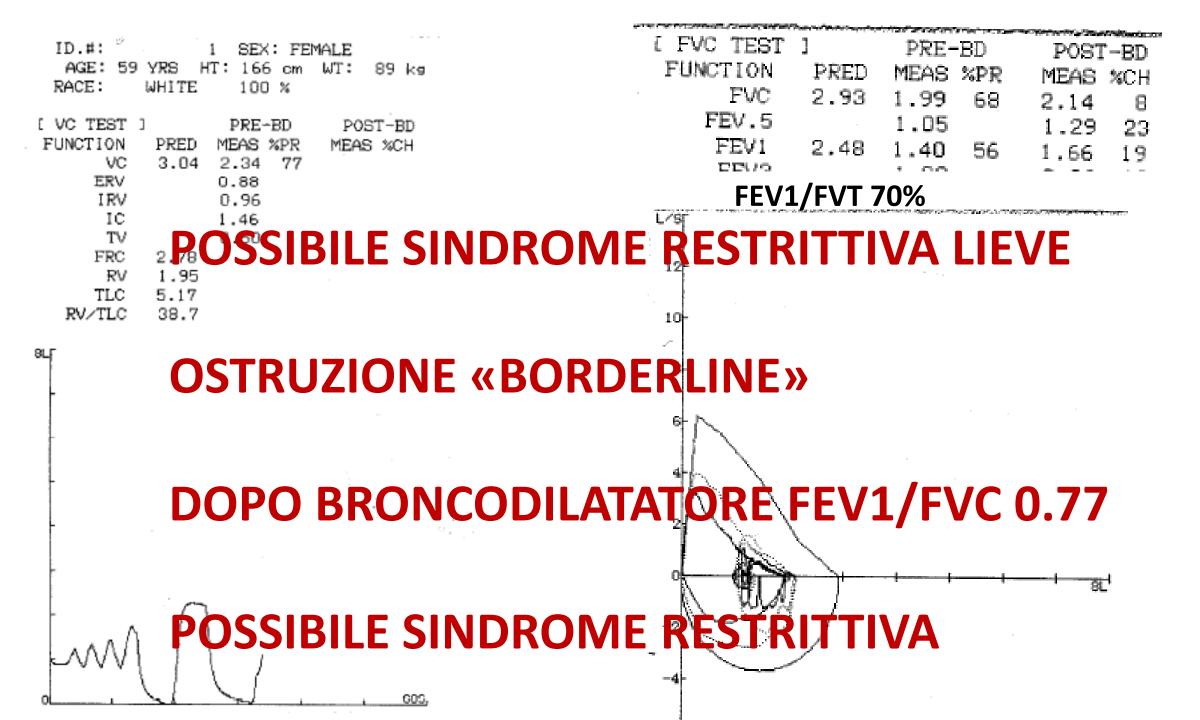


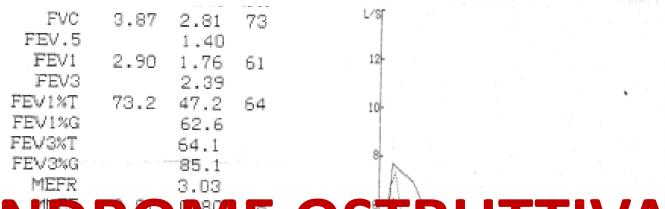












## SINDROME OSTRUTTIVA MODERATA

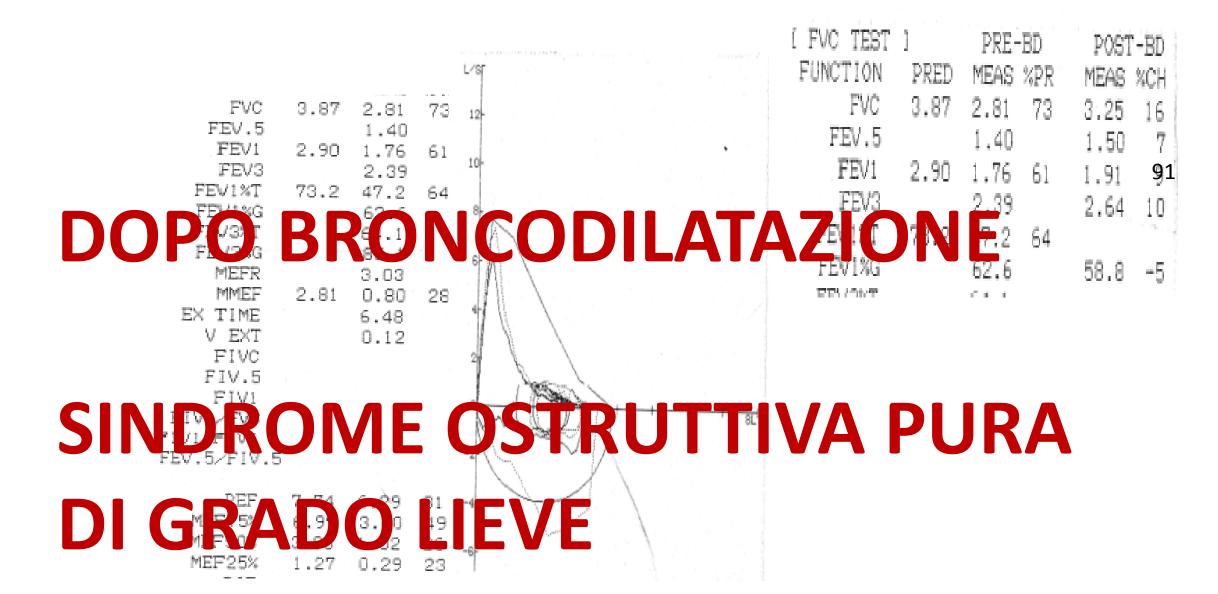
FIVC

## POSSIBILE CONCOMITANTE

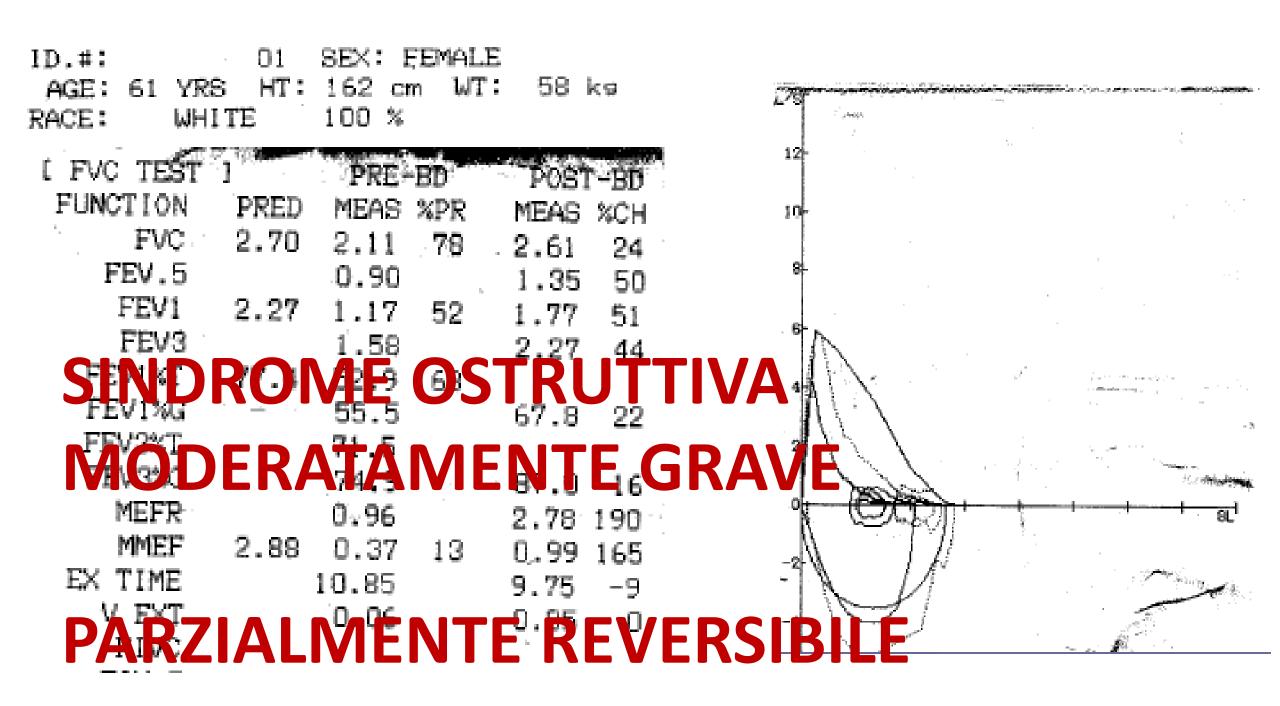
FIV1/FIV0

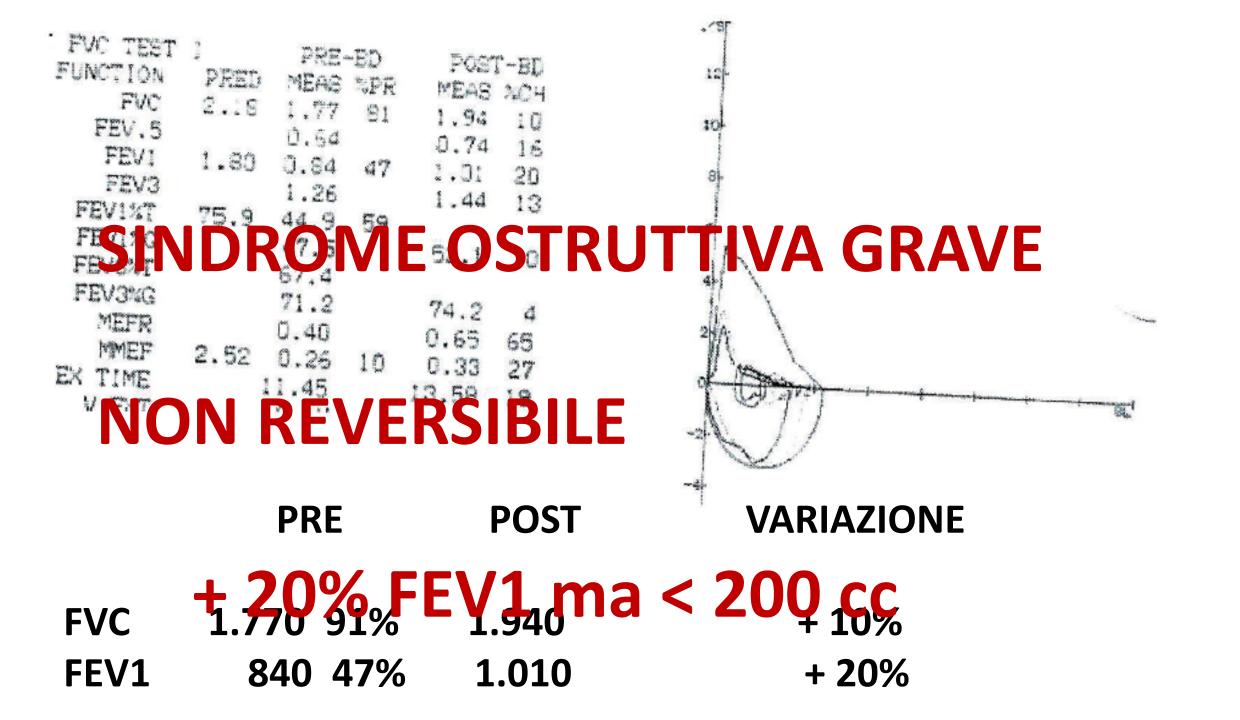
## COMPONENTE RESTRITTIVA

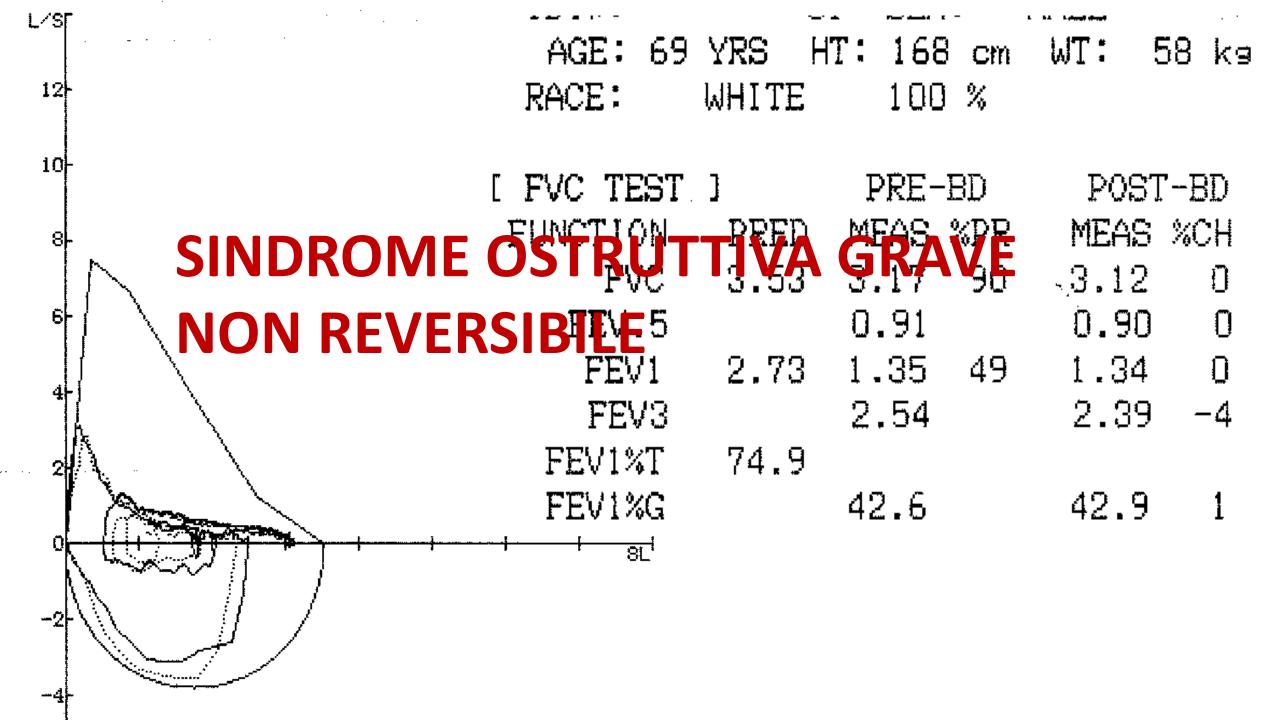
MEF75% 6.99 3.40 49 MEF50% 3.98 1.02 26 MEF25% 1.27 0.29 23





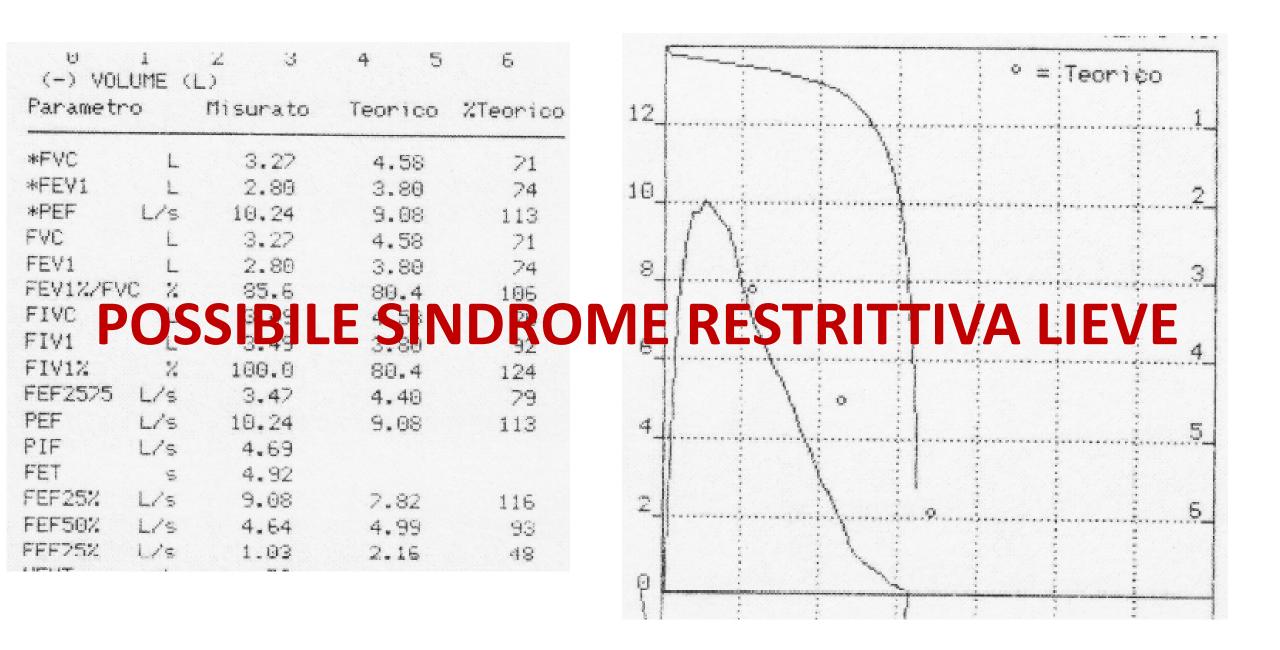






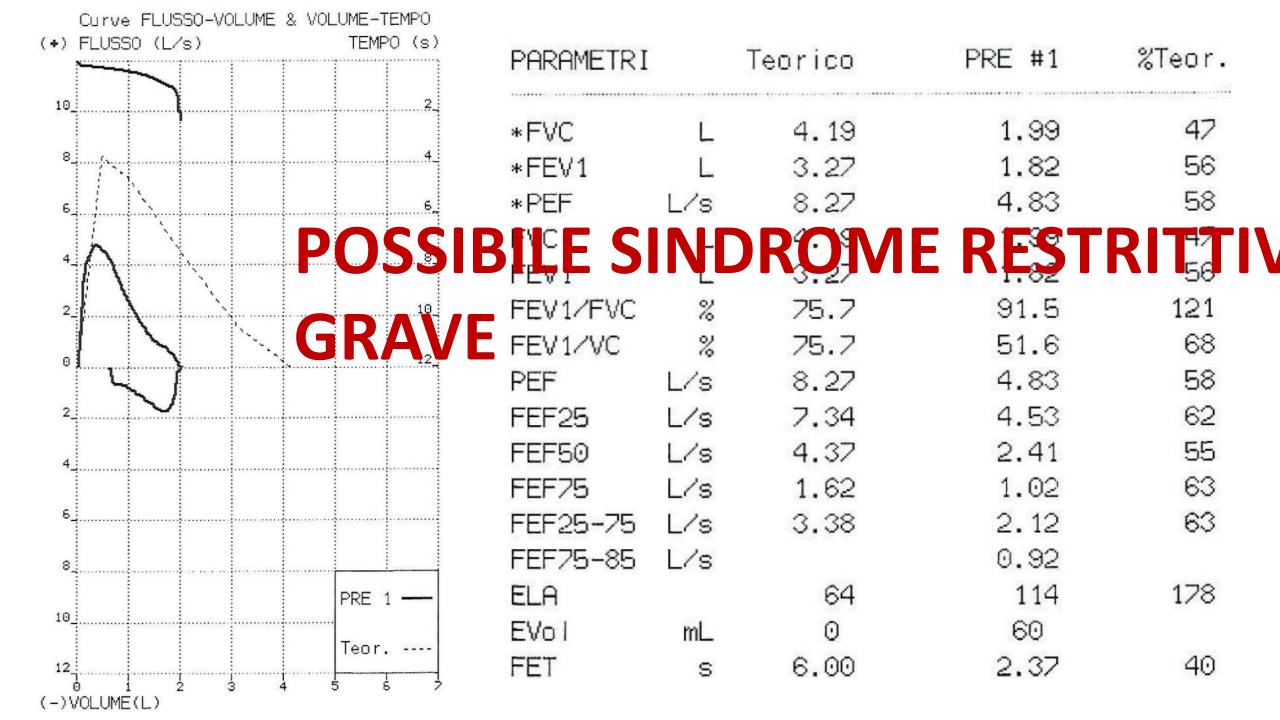


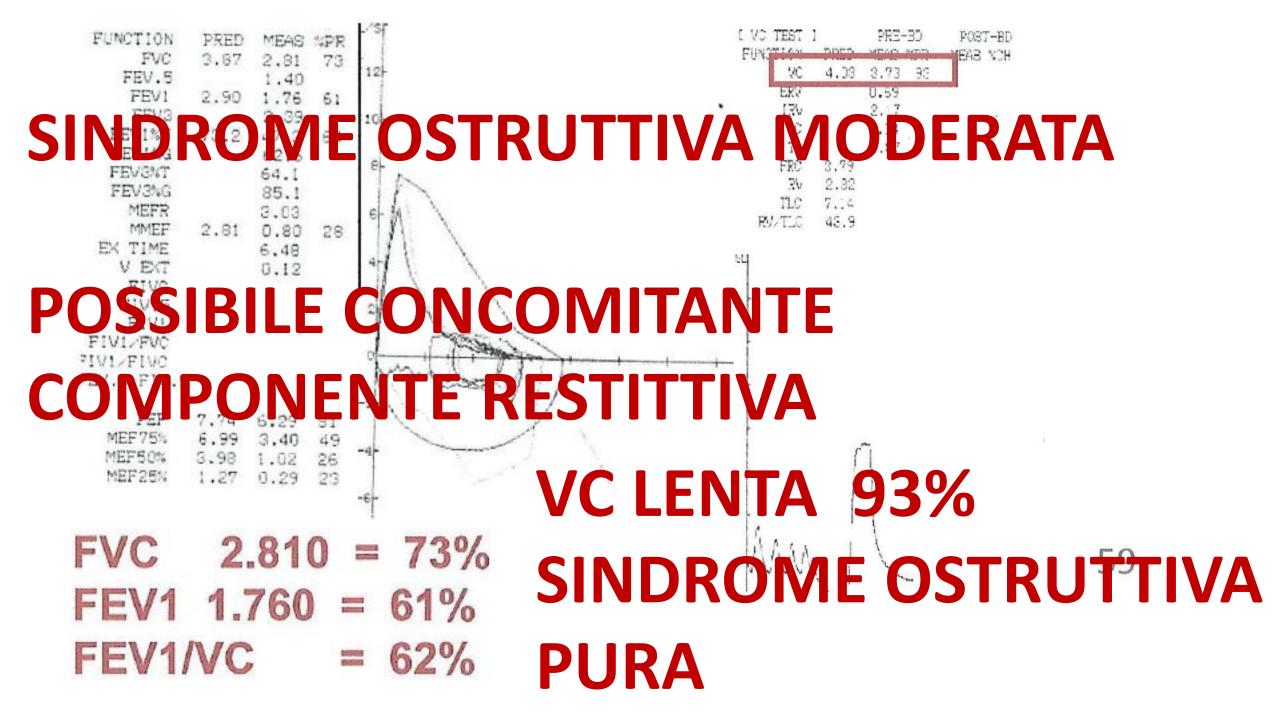




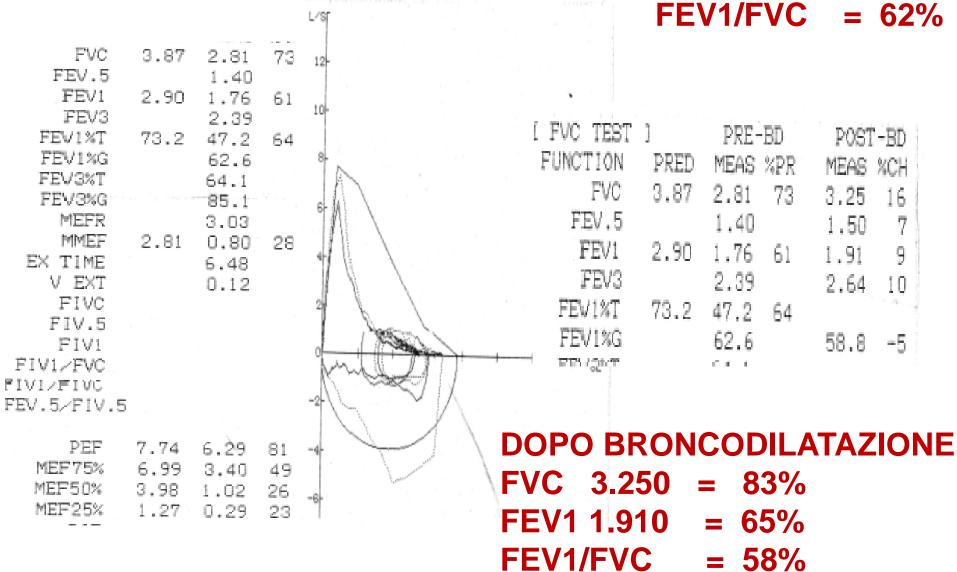


FVC 1.780 56.8% FEV1 1.520 67.5% FEV1/FVC 119%





FVC 2.810 = 73% FEV1 1760 = 61% FEV1/FVC = 62%



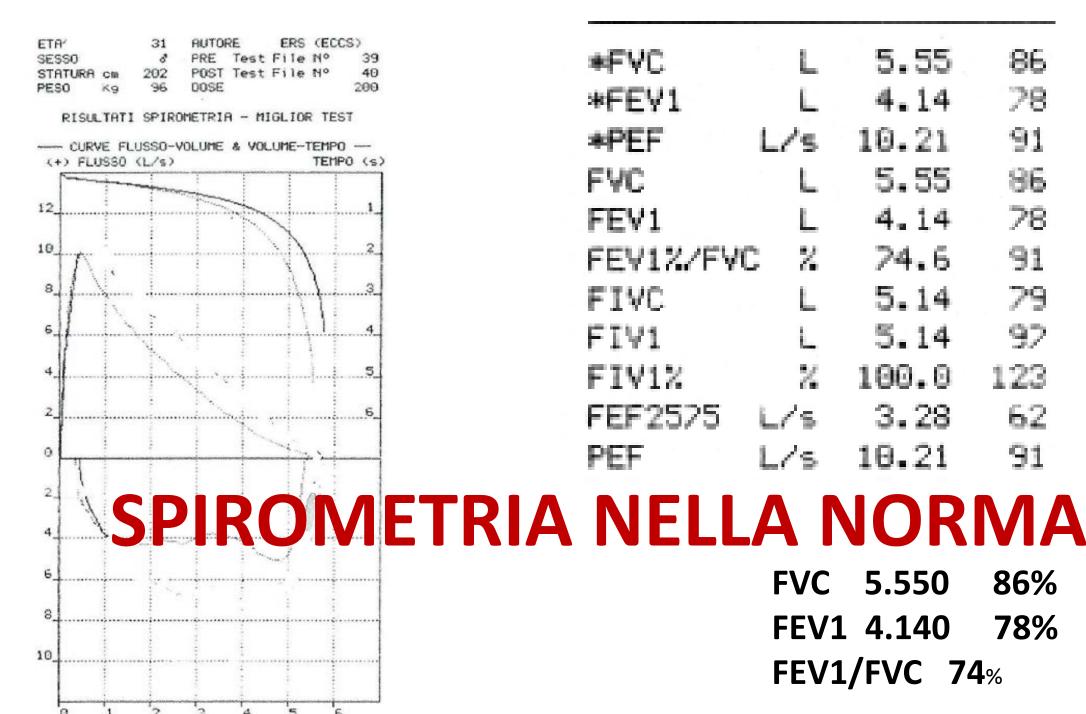


FVC 2.380 = 70% FEV1 1,220 = 41%

FEV1/FVC = 43%

SINDROME OSTERUZ311VA%LIEVE

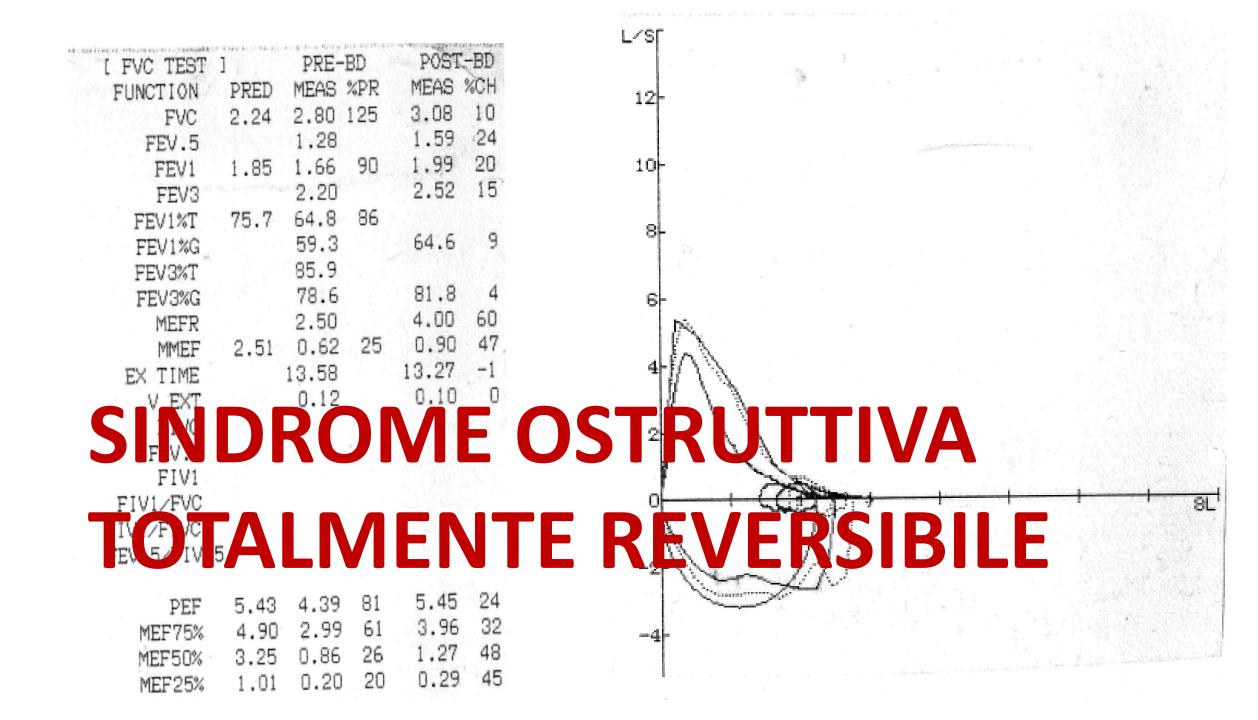
FEV1/FVC = 58%



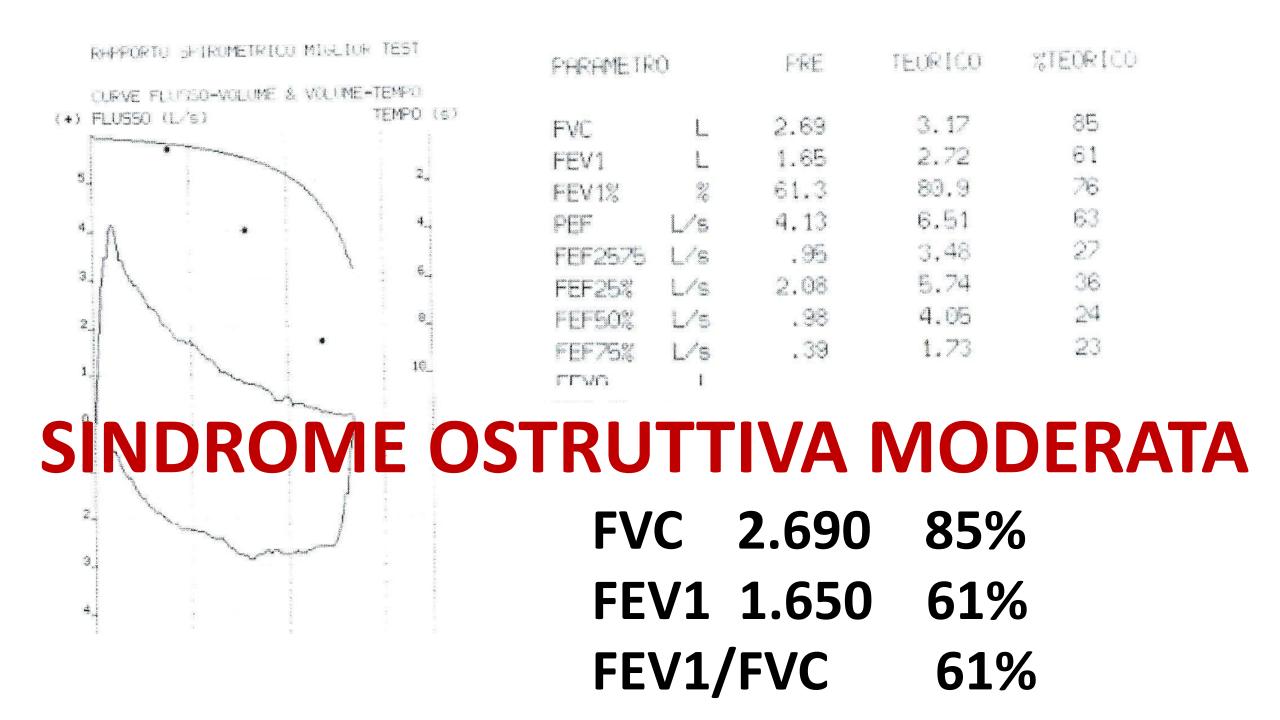
ETA' 31 AUTORE ERS (ECCS) SESSO 8 PRE Test File N° 39 STATURA cm 202 POST Test File N° 40 PESO K9 96 DOSE 200										
	RISULTATI SPIROMETRIA - MIGLIOR TEST									
(+	CURVE FLUSSO-VOLUME & VOLUME-TEMPO (+) FLUSSO (L/s) TEMPO (s)									
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Parametr	0	PRE	%Teor	POST	%Teor	%PRE	
*FVC	L	5.55	86	5.81	90	185	
*FEV1	L	4.14	28	4.25	90	115	
*PEF	L/s	10.21	91	11.14	99	109	
FYC	L	5.55	86	5.81	90	105	
FEV1	L	4.14	78	4.75	90	115	
FEV1%/FV	C %	24.6	91	81.8	100	110	
FIVC	L	5.14	29	5.34	82	184	
FIV1	L	5.14	92	5.33	101	104	
FIV1%	7.	100.0	123	99.8	122	100	
FEF2575	L/s	3.28	62	5.08	96	155	
PEF	L/s	10.21	91	11.14	99	109	
PIE	1.75	5-13		2.89		148	

FVC = 5.810 FEV1 = 4.750 FEV1/FVC = 81%









PRE POST VARIAZIONE

OTTIMA RISPOSTA AL BRONCODILATATORE

FVC 2.940 103% 3.810 + 30%



Parametro		PRE	%Teor	POST	%Teor	%PRE
*FVC	L	4.31	95	4.62	103	108
*FEV1	L	2.31	64	2.92	83	129
*PEF	L/s	5.52	63	8.26	94	150
FVC	L	4.31	95	4.67	103	108
FEV1	L	2.31	64	2.92	83	129
FEV1%/FVC	Z	53.6	20	63.6	83	119
FIVC °	L	4.14	91	4.42	92	102
FIV1	L	4.14	115	4.42	123	187
FIV1%	Z	100.0	130	100.0	130	100

# SINDROME OSTRUTTIVA MODERATA

# PARZIALMENTE REVERSIBILE

FEV1 2.310 = 64%

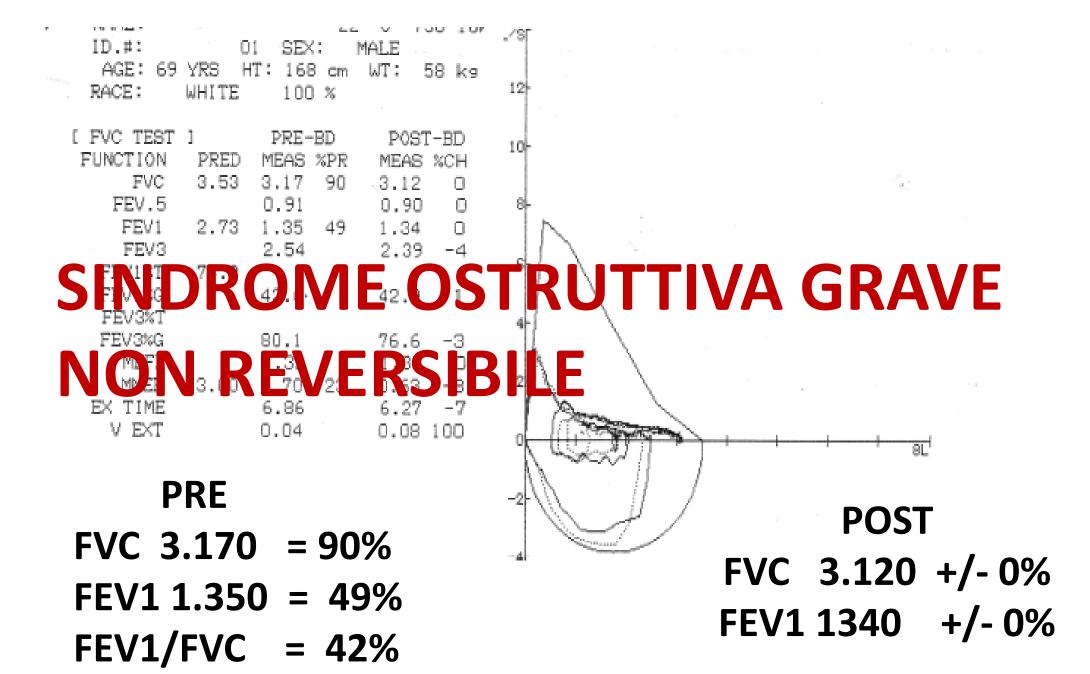
**FEV1/FVC** = 53%

### **POST**

FVC 4.670 = 103% + 8%

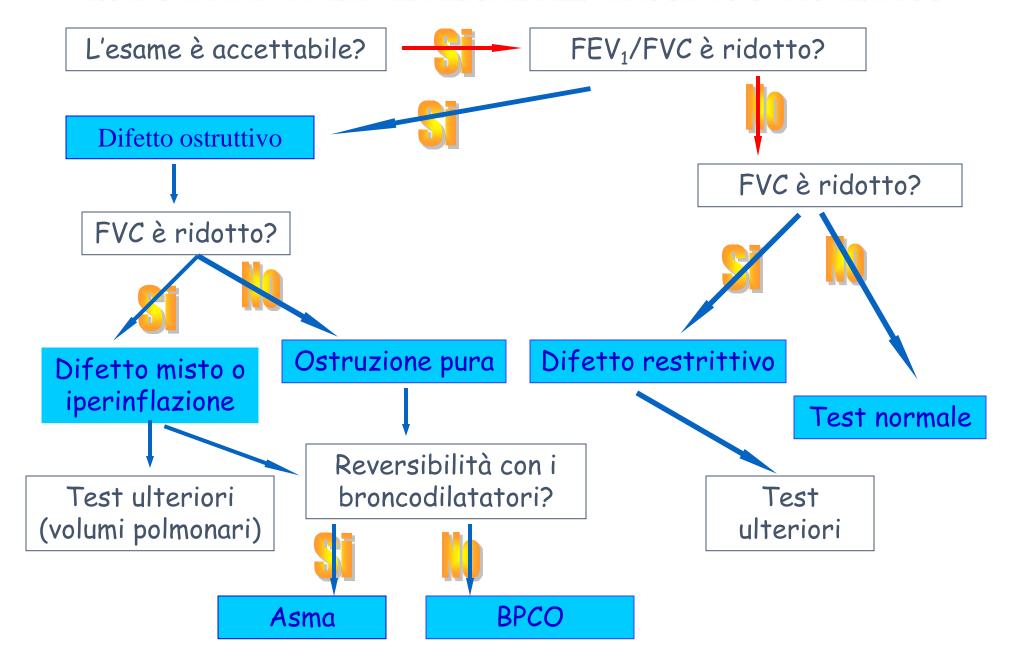
FEV1 2.970 = 83% + 29%

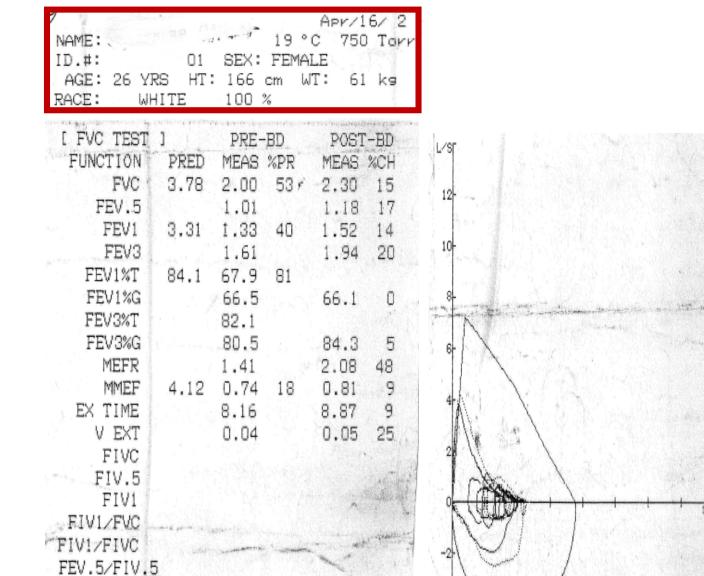
FEV1/FVC = 63%





## FLOW-CHART DI INTERPRETAZIONE DEL TRACCIATO SPIROMETRICO





PEF

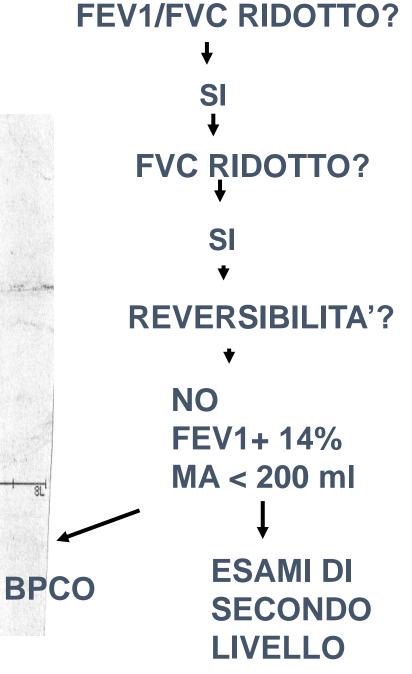
4.57

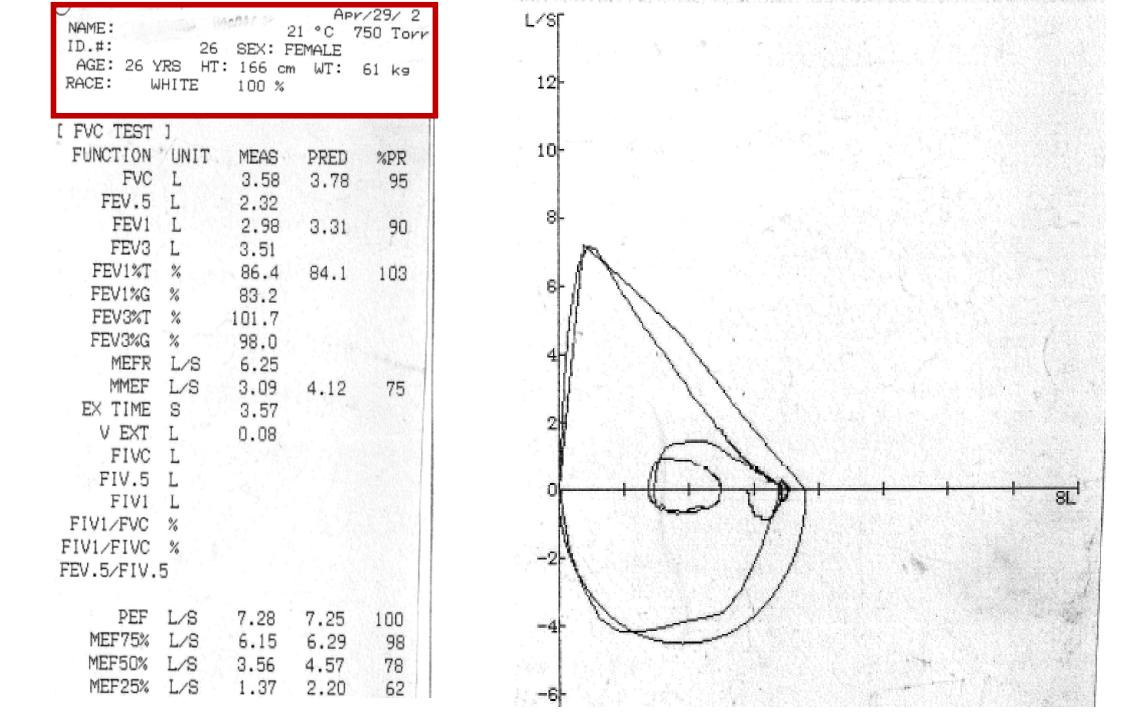
2.20

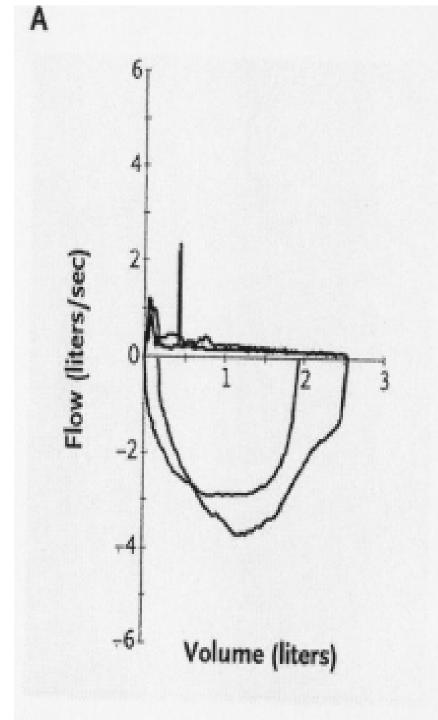
0.25

MEF50%

MEF75%

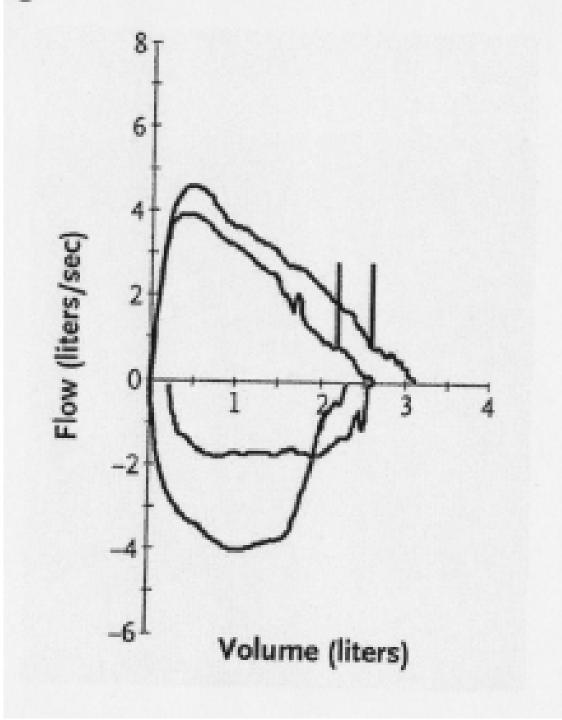




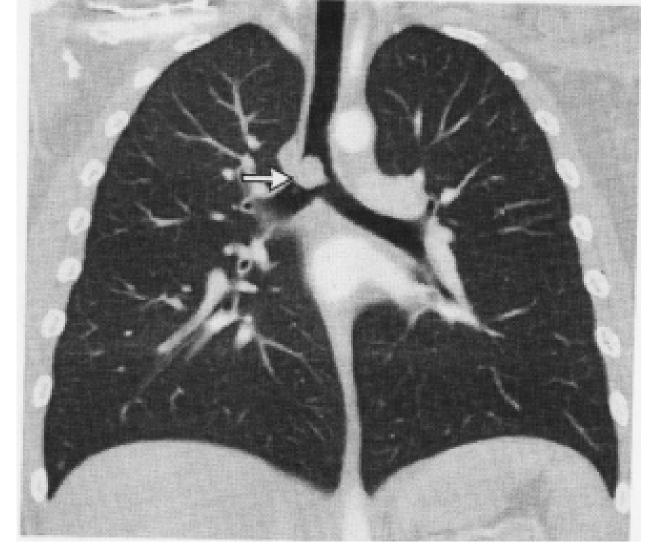


Ragazza di 12 anni, da mesi presenta wheezing episodico, dispnea, progressiva Intolleranza allo sforzo.

Trattata con beta-2-stimolanti short acting e long acting, steroidi inalatori e orali e montelukast senza beneficio



Stesso soggetto una settimana dopo



La broncoscopia e la TAC successiva evidenziano ostruzione 90% della trachea distale da parte di una massa vascolare

**Esame istologico:** 

**Pseudotumor vascolare** 

**Trattamento: Laser** 

## TEST DI REVERSIBILITA

il FEV1 aumenta di > 12% **@** 200 ml rispetto al basale tornando a valori normali (> 80% del predetto):

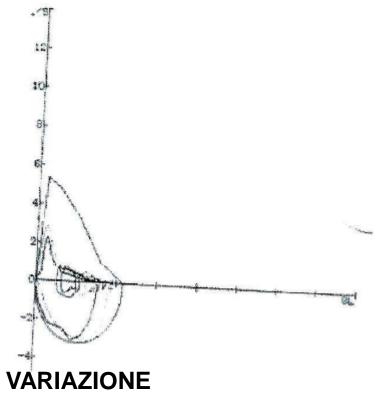
DEFICIT DI TIPO OSTRUTTIVO COMPLETAMENTE REVERSIBILE

il FEV1 è aumentato del 12% o di 200 ml rispetto al valore basale ma resta < 80% del teorico e VEMS/CVF < 70:

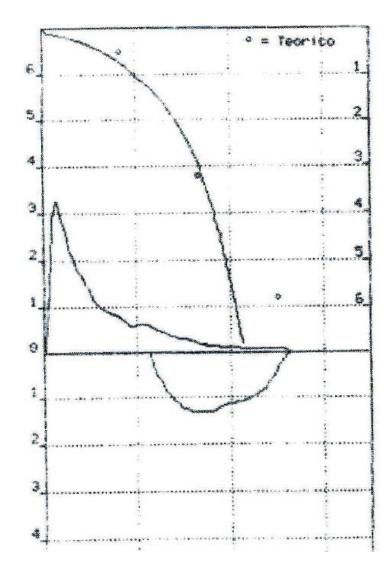
**DEFICIT DI TIPO OSTRUTTIVO PARZIALMENTE REVERSIBILE** 

il FEV1 aumenta < 12% o di 200 ml rispetto al valore basale: DEFICIT VENTILATORIO NON REVERSIBILE

FVC TEST FUNCTION FVC FEV.5 FEV.1 FEV.3 FEV.3 FEV.176 FEV.176	PRED 2.18 1.80 75.9	PRE- MEAS 1.77 0.64 1.26 44.9 47.5		POST MEAS 1.94 0.74 1.31 1.44		
FEVOXT FEVOXG MEFR MMEF EX TIME V FXT	2.52	67.4 71.2 0.40 0.25	10	74.2 0.65 0.33 13.58	65 27	



	PRE	POST	VARIAZ
FVC	1.770 91%	1.940	+ 10%
FEV1	840 47%	1.010	+ 20%



Parametro		Misurato	Teorico	2Teorico
*FVC	L	2.69	3.33	81
*FEVI	-	1.09	2.62	42
*PEF	15	3.26	7.35	44
FVC	L	2.69	3.33	81
FEV1	L	1.09	2.62	42
FEV12/FVC	%	40.5	25.2	54
FIVC	L	1,48	3.33	44
FIVI	L	1.48	2.62	56
FIVIZ	74	100.0	25.2	132
FEF2575	1/4	.30	3.09	10
PEF	1/5	3.26	7.35	44
BFE	1 /=	1 33		

ETR' 24 STATURA cm 158 SESSO 9 PESO Kg 53

TEORICO ERS (ECCS) % TEORICO IN USO 100%

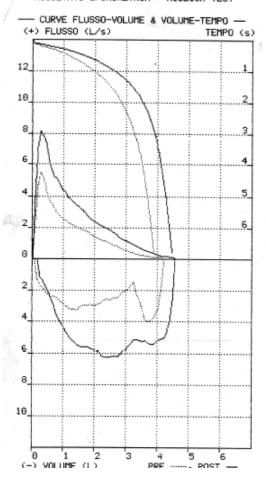
PRE FILE N° 374

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PARAMETR	0	PRE	TEOR1C0	%TEOR1
FVC	1	3.19	3.46	92
FEV1	1.	2.80	3.01	93
FEV1%	%	87.8	84.4	104
PEF	L/s	5.83	6.83	85
FEF2575	L/s	3.44	4.04	-85
FEF25%	L/s	5.34	6.06	88
FEF50%	L/s	3.62	4.40	82
FEF75%	L/s	1.49	2.14	70
FEV6	L			*
FEV1/FE	/6 %			
FET	s	3.88		*
VEXT	mL.	90		- Mar. 14

# ETA' 57 AUTORE ERS (ECCS) SESSO 8 PRE Test File N° 24 STATURA cm 180 POST Test File N° 25 PESO K9 97 DOSE 200

#### RISULTATI SPIROMETRIA - MIGLIOR TEST



			-		
Parametro	PRE	2Teor	POST	%Teor	%PRE
*FVC L	4.31	95	4.62	103	108
*FEV1 L	2.31	64	2.97	83	129
*PEF L/s	5.52	63	8.26	94	150
FVC L	4.31	95	4.67	103	108
FEV1 L	2.31	64	2.92	83	129
FEV1%/FVC %	53.6	20	63.6	83	119
FIVC L	4.14	91	4.42	92	162
FIV1 L	4.14	115	4.42	123	182
FIV1% %	100.0	130	100.0	130	100
FEF2575 L/s	1.07	29	2.01	54	188
PEF L/s	5.52	63	8.26	94	150

### PRE

FVC 4.310 = 95%

FEV1 2.310 = 64%

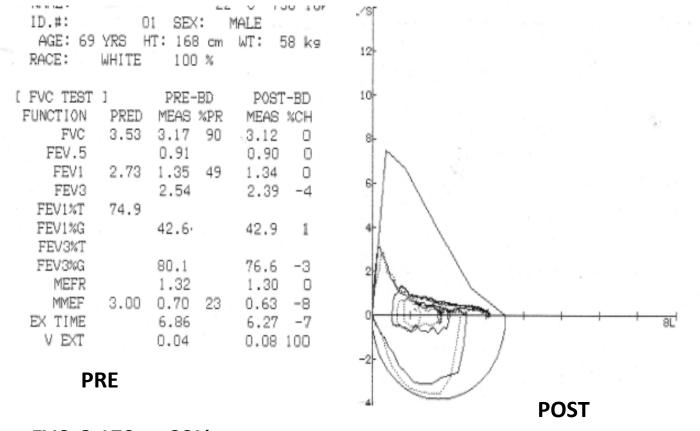
FEV1/FVC = 53%

### **POST**

FVC 4.670 = 103% + 8%

FEV1 2.970 = 83% + 29%

FEV1/FVC = 63%

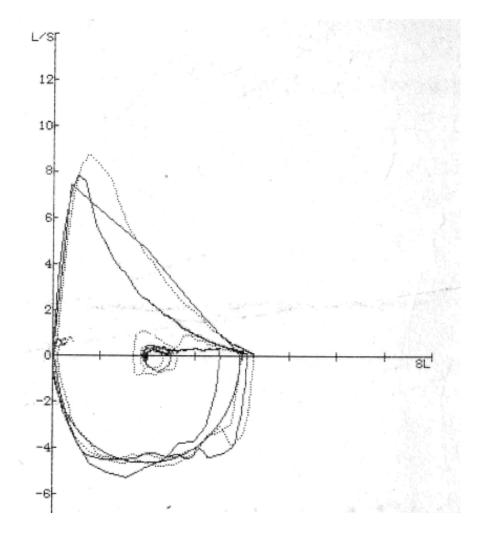


FVC 3.170 = 90% FEV1 1.350 = 49%

FEV1/FVC = 42%

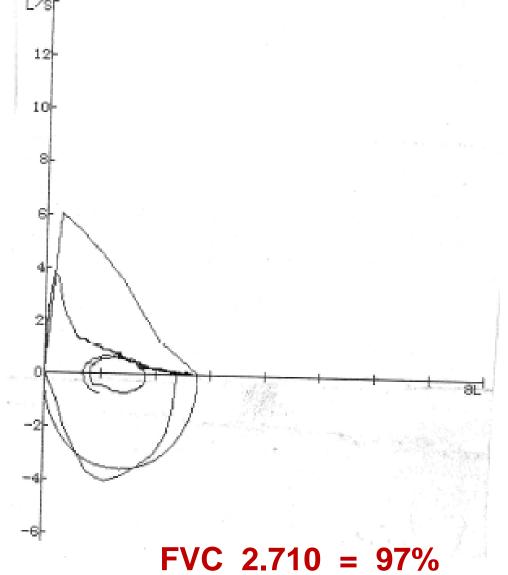
FVC 3.120 +/- 0% FEV1 1340 +/- 0%

[ FVC TEST					-BD	
	PRED	MEAS	%PR	MEAS	%CH	1
FVC	3.99	4.17	105	4.32	4	
FEV.5		2.20		2.75	25	
FEV1	3.49	2.95	85			
FEV3		3.96		4.29		
FEV1%T	84.3				- 198	
FEV1%G		70.7		82.4	16	
FEV3%T		106.2				
FEV3%G		95.0		99.3	5	
MEFR		6.25		6.67		
MMEF	4.20			3.43		
EX TIME		4.39		3.73		- Variable
V EXT		0.14		0.23		
FIVC		4.12		4.20		
FIV.5	100	2.02		1.74		
FIV1		3.95		3.80		
EIV1/FVC	Mr. John	94.7		88.0		
FIV1/FIVC		95.9		90.5		
FEV.5/FIV.5	N .	1.09		1.58		
PEF	7.50	7.96	106	8.78	10	
MEF75%				8.02		
MEF50%				3.95		
MEF25%		0.86		1.57		
	25.757			Contraction of	- Total	Forman and





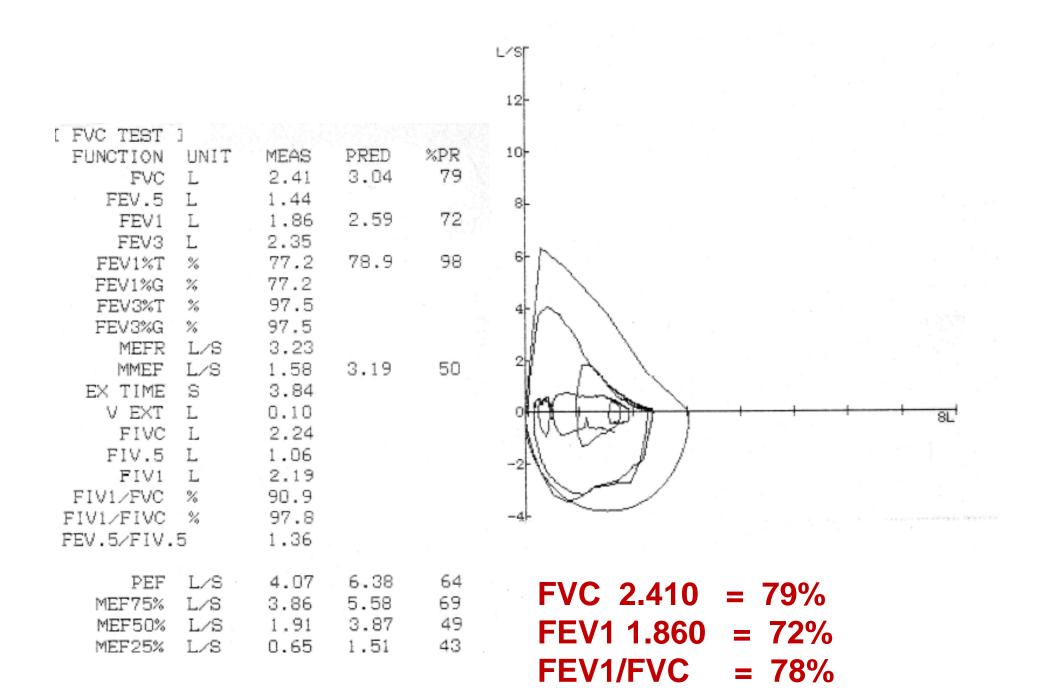
[ FVC TEST	]		en en en en en en	Maring Pro-
FUNCTION	UNIT	MEAS	PRED	%PR
FVC	L	2.71	2.80	97
FEV.5	L	0.94	1.40	
FEV1	L .	1.37	2.36	- 58
FEV3	L	2.06	BC 0	
FEV1%T FEV1%G	%	46.8	76.8	61
FEV3%T	%	50.6 70.3		
FEV3%G	%	76.0		
MEFR	L/S	1.35		
MMEF	L/S	0.52	2.83	18
EX TIME	S	9.53		
V EXT	L	0.05		
FIVC	L			
FIV.5	L			
FIVI	L			
FIV1/FVC FIV1/FIVC	%			
FEV.5/FIV.	%			
ILV.J/FIV.	J			
PEF	L/S	3.84	6.11	63
MEF75%	L/S	1.35	5.34	25
MEF50%	L/S	0.70	3.62	19
MEF25%	L/S	0.23	1.25	18



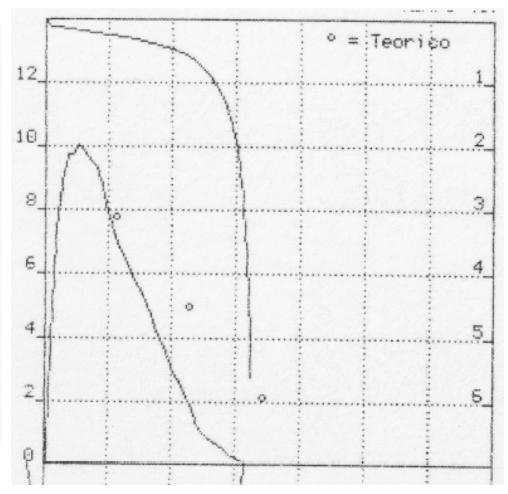
**FEV1 1.370 = 58%** 

FEV1/FVC = 50%

[ FVC TEST ] PRE-BD FUNCTION PRED MEAS %PR     FVC 3.71 3.17 85     FEV.5 0.64     FEV1 2.85 0.97 34     FEV3 1.88     FEV1%T 74.5     FEV1%G 30.6     FEV3%T 59.3     MEFR 0.74     MMEF 2.99 0.07 12     EX.TIME 10.15     V EXT 0.05     FIVC 1.83     FIV1 1.63     FIV1/FVC 57.7     FIV1/FVC 57.7     FIV1/FIVC 100.0	12- 10- 8- 6- 4- 13- 14- 14- 15- 16- 17- 18- 18- 18- 18- 18- 18- 18- 18- 18- 18
PEF 7.67 3.73 49 MEF75% 6.86 3.65 9 MEF50% 3.97 3.42 11 MEF25% 1.30 0.20 15	FVC 3.170 = 85% FEV1 0.970 = 34% FEV1/FVC = 30%

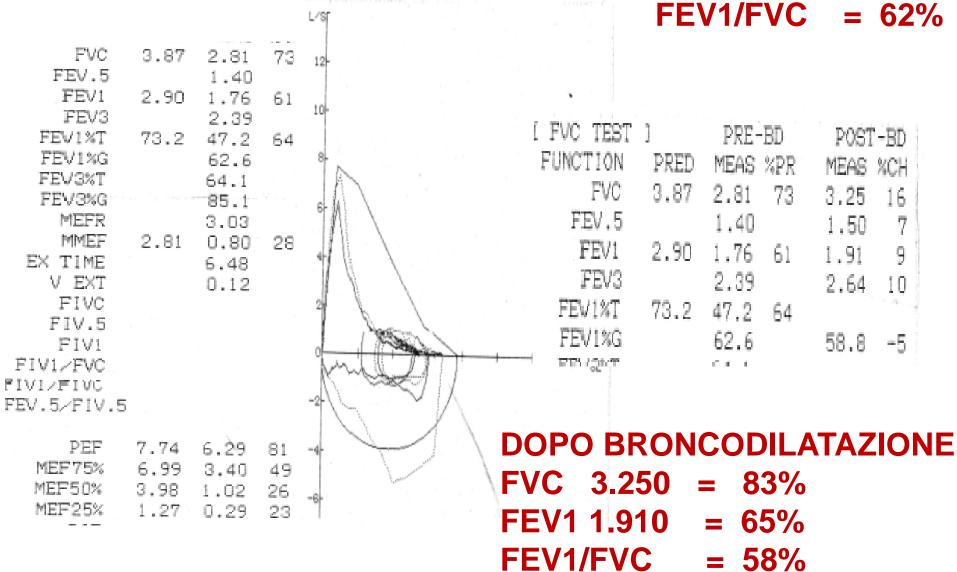


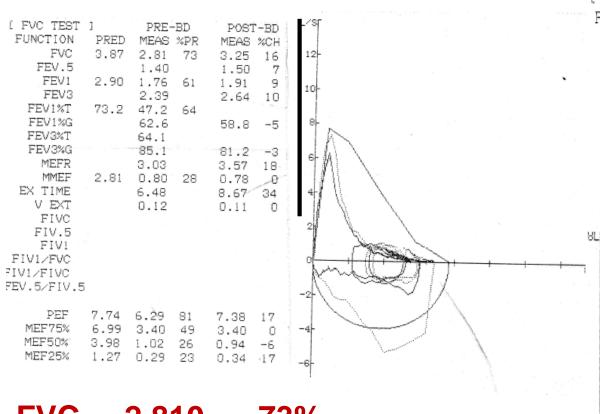
Parametr	,0	Misurato	Teorico	%Teorico
*FVC	L	3.27	4.58	71
*FEV1	L	2.89	3.80	24
*PEF	L/s	10.24	9.08	113
FVC	L	3.27	4.58	71
FEV1	L	2.80	3.80	74
FEV12/FV	'C %	85.6	80.4	106
FIVC	L	3.49	4.58	76
FIV1	L	3.49	3.80	92
FIV1%	%	100.0	80.4	124
FEF2575	L/s	3.47	4.48	79
PEF	L/s	10.24	9.08	113
PIF	L/s	4.69		
FET	5	4.92		
FEF25%	L/5	9.08	7.82	116
FEF50%	L/s	4.64	4.99	93
FFF75%	1/5	1.03	2.16	48
Short Labo	100	W #		



FVC 3.270 = 71% FEV1 2.800 = 74% FEV1/FVC = 90%

FVC 2.810 = 73% FEV1 1760 = 61% FEV1/FVC = 62%

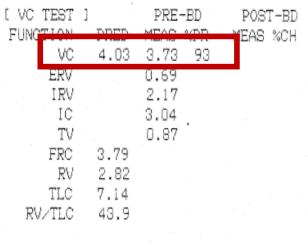


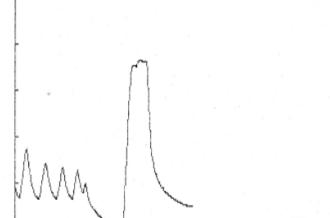


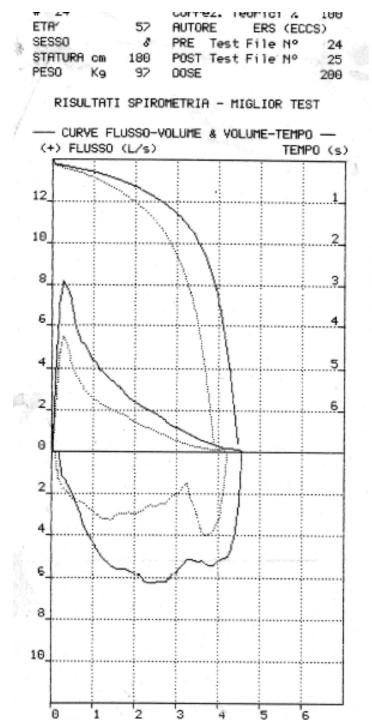
FVC 2.810 = 73% FEV1 1.760 = 61% FEV1/VC = 62% ID.#: 01 SEX: MALE

AGE: 78 YRS HT: 178 cm WT: 96 kg

RACE: WHITE 100 %







Parametr	0	PRE	%Teor	POST	%Teor	%PRE
*FVC	L	4.31	95	4.62	103	108
*FEV1	L	2.31	64	2.92	83	129
*PEF	L/s	5.52	63	8.26	94	150
FVC	L	4.31	95	4.67	103	108
FEV1	L	2.31	64	2.92	83	129
FEV1%/FV	C %	53.6	20	63.6	83	119
FIVC	L	4.14	91	4.42	92	102
FIV1	L	4.14	115	4.42	123	187
FIV1%	7.	100.0	130	100.0	130	100
FEF2575	L/s	1.07	29	2.01	54	188
PEF	L/s	5.52	63	8.26	94	150

## **PRE**

FVC 4.310 = 95%

FEV1 2.310 = 64%

FEV1/FVC = 53%

## **POST**

FVC 4.670 = 103% + 8%

FEV1 2.970 = 83% + 29%

FEV1/FVC = 63%

	ALE	12-	
[ FVC TEST ] PRE-BD	POST-BD	10-	
FUNCTION PRED MEAS %PR	MEAS %CH		.4.
FVC 3.53 3.17 90	3.12 0	8	. 2
FEV.5 0.91	0.90 0	I N	
FEV1 2.73 1.35 49	1.34 0	6-1	
FEV3 2.54	2.39 -4	91	
FEV1%T 74.9			
FEV1%G 42.6	42.9 1	4	
FEV3%T		h la	
FEV3%G 80.1	76.6 -3	2	
MEFR 1.32	1.30 0		
MMEF 3.00 0.70 23	0.63 -8		
EX TIME 6.86	6.27 -7	1 was	' 8L'
V EXT 0.04	0.08 100		
DDE		7 1	
PRE			
		POST	

**FVC 3.170 = 90%** 

**FEV1 1.350 = 49%** 

FEV1/FVC = 42%

FVC 3.120 +/- 0% FEV1 1340 +/- 0%

